The future of neuroethics and the relevance of the law

Ligthart, Sjors; Douglas, Thomas; Bublitz, Christoph; Meynen , Gerben

Published in:
AJOB Neuroscience

DOI:
10.1080/21507740.2019.1632961

Publication date:
2019

Document Version
Other version

The Future of Neuroethics and the Relevance of the Law

Sjors Ligthart, Thomas Douglas, Christoph Bublitz & Gerben Meynen

[This is a pre-publication version. The final version is forthcoming in *AJOB Neuroscience*.]

In *Neuroethics at 15: The Current and Future Environment for Neuroethics*, the authors identify three main themes that should shape the neuroethical debate for the coming years: 1) the rapid and continuous developments in new technologies; 2) the expanding global scale of the neuroscience landscape, which calls for global guidelines, and 3) the expanding public and private applications of neurotechnologies.

Meanwhile, in their insightful analysis of what the next step of neuroethics should look like, the legal aspects, in our view, do not receive sufficient attention. As neurotechnologies move from research to application, legal provisions will—and should—increasingly be developed, and neuroethics should seize the opportunity to inform these. But the interaction between the disciplines should not run in one direction only. There are areas of thinking about neurotechnologies—such as mental privacy (Bublitz and Merkel 2014)—where legal thinking is arguably more advanced than ethical thinking, and neuroethics should seek to learn from legal scholarship in these areas.

We believe, then that a fourth element should shape the future development of neuroethics: collaboration between neuroethical and legal research. As we show below, the need for such collaborative research can in fact be tied directly to each of the three themes identified by the authors.

First, rapid technological change. The authors outlined various developments in neurotechnologies and artificial intelligence that can be used to harvest brain data, predict and monitor behavior and diagnose mental illness. As the authors rightly note, these technologies could be applied not only in a medical or private context, but also for legal purposes, e.g., in the context of forensic diagnostics and risk assessments (Meynen 2017, Meynen 2019), or for the rehabilitation of criminal offenders (Birks and Douglas 2018). Moreover, some neurotechnologies, such as brain imaging, are already being used in criminal justice systems around the world (e.g., Alimardani and Chin 2019; Hafner 2019). Since criminal law could legitimize investigative interventions and criminal sanctions *without consent* of the person concerned, the application of neurotechnologies in this context particularly raises questions regarding the subject's right to mental privacy, cognitive integrity and algorithmic injustice. Obviously, these issues involve both ethical and legal concerns (Birks and Douglas 2018; Ligthart 2019). For instance, (how) do current *legal* rights protect the individual's cognitive liberty and privacy? To which extent should an individual's *moral* right protect the notions of cognitive liberty and privacy? Do *ethical* considerations show the need for stronger *legal* protection? And if so, how should such protection be legally structured?

Furthermore, a legal perspective on rapid technological change has another interesting characteristic: rather than developing regulations for individual (neuro)technologies, the law usually tries to build overarching, sustainable provisions that apply simultaneously to different

interests of individuals. A more general approach of regulating individuals' interests would also be valuable for the neuroethical debate. This is especially true since many issues debated in the current neuroethical literature are not unique to specific novel neurotechnologies, but also arise regarding more traditional interventions (Ienca and Andorno 2017). For instance, questions regarding privacy, consent, identity and prediction of behavior, have *mutatis mutandis* also been raised by the developments in genetics, and will also occur regarding other, non-neurotechnological interventions which impact on the psyche of an individual, such as solitary confinement or environmental modulation of motivation (Dillon 2019; Douglas 2018). This means that as neuroethics starts to develop actual regulations, the scope cannot be limited to *neuro*ethics, strictly defined, but has to be broadened to other technologies and interventions that are relevant to the psyche more generally and in that sense raise 'psycho-ethical' issues.

Second, the expanding global landscape of neuroscience research. As the authors argue, the expanding global scale of current research initiatives calls for more collaboration and sharing of data across many different nations and cultures, which raises additional ethical challenges. Therefore, the authors propose, international guidelines should be developed in order to harmonize ethical standards across collaborating countries. Obviously, the globalization of neuroscience and sharing data between different nations – with different legal systems – also raise legal questions. An example concerns the legal regulation of personal data yielded within the context of a global research project. How will different privacy regulations, e.g., of the European Union and China, relate to each other, and how will they regulate sharing data of one and the same research project? In other words, if global guidelines are to be developed in order to regulate international neuroscientific research, taking into account existing legal provisions will be highly relevant. Furthermore, the neuroethical guidelines will not only have to take legal considerations into account, but they will probably have some legal force themselves. The legal consequences of potential neuroethical guidelines have to be considered and thought through carefully. Since legal scholars are experts in translating societal, political and moral values into regulative frameworks, collaboration between lawyers and ethicists in the development of global neuroethical guidelines would be very valuable.

Third, increase in applications of neurotechnologies in society. The authors underline the increase in the use of neurotechnologies, e.g., by private companies, the military, and individual consumers. Today, direct-to-consumer neurotechnologies – like wearable electroencephalography – are marketed as ways to *inter alia* optimize brain fitness and improve cognitive functions. From this popularization of neurotechnologies, the authors argue, important ethical questions arise regarding safety and efficacy, the management of public expectations, and the privacy and integrity of personal data. These are areas in which neuroethics is in a strong position to inform the development of the new legal provisions that will inevitably be developed. But they are also areas in which existing law will need to be taken into account. As neurotechnologies are deployed in society, they are *ipso facto* subjective to regulative national and international legal rules, such as domestic tort law, the EU General Data Protection Regulation, and even international human rights. As a consequence, ethical discussions of the desirability of new legal provisions should start by identifying the ways in which current legal frameworks already regulate such use and examining whether, from an ethical perspective, those current legal regulations are satisfactory.

In summary, the three themes that the authors identified, which should shape the future of neuroethics, all require close collaboration between neuroethicists and lawyers. In our view, neuroethics should be proactive in establishing such a collaboration, because otherwise the law may find its own solutions without the much needed neuroethical input in these matters.

References

Alimardani, Armin, and Jason Chin. 2019. 'Neurolaw in Australia: The Use of Neuroscience in Australian Criminal Proceedings'. *Neuroethics*, January. https://doi.org/10.1007/s12152-018-09395-z.

Birks, David, and Thomas Douglas, eds. 2018. *Treatment for Crime: Philosophical Essays on Neurointerventions in Criminal Justice*. Engaging Philosophy. Oxford, New York: Oxford University Press.

Bublitz, Jan Christoph, and Reinhard Merkel. 2014. 'Crimes Against Minds: On Mental Manipulations, Harms and a Human Right to Mental Self-Determination'. *Criminal Law and Philosophy* 8 (1): 51–77. https://doi.org/10.1007/s11572-012-9172-y.

Dillon, Rosalind. 2019. 'Banning Solitary for Prisoners with Mental Illness: The Blurred Line Between Physical and Psychological Harm'. *Northwestern Journal of Law & Social Policy* 14 (2): 265. https://scholarlycommons.law.northwestern.edu/njlsp/vol14/iss2/3.

Douglas, Thomas. 2018. *Neural and Environmental Modulation of Motivation: What's the Moral Difference?* Oxford University Press. https://www.oxfordscholarship.com/view/10.1093/oso/9780198758617.001.0001/oso-9780198758617-chapter-12.

Hafner, Miha. 2019. 'Judging Homicide Defendants by Their Brains: An Empirical Study on the Use of Neuroscience in Homicide Trials in Slovenia'. *Journal of Law and the Biosciences*. https://doi.org/10.1093/jlb/lsz006.

Ienca, Marcello, and Roberto Andorno. 2017. 'Towards New Human Rights in the Age of Neuroscience and Neurotechnology'. *Life Sciences, Society and Policy* 13 (1): 5. https://doi.org/10.1186/s40504-017-0050-1.

Ligthart, Sjors L.T.J. 2019. 'Coercive Neuroimaging Technologies in Criminal Law in Europe'. In *Regulating New Technologies in Uncertain Times*, 83–102. Information Technology and Law Series. The Hague: T.M.C. Asser – Springer.

Meynen, Gerben. 2017. 'Brain-Based Mind Reading in Forensic Psychiatry: Exploring Possibilities and Perils'. *Journal of Law and the Biosciences* 4 (2): 311–29. https://doi.org/10.1093/jlb/lsx006.

Meynen, Gerben. 2019. 'Ethical Issues to Consider Before Introducing Neurotechnological Thought Apprehension in Psychiatry'. *AJOB Neuroscience* 10 (1): 5–14. https://doi.org/10.1080/21507740.2019.1595772.